passing the spaced apart multiple bands through a second beam splitter to form a second band pattern defining the plurality of servo tacks tracks within a respective one of the spaced apart multiple bands.

60. (New) The method according to claim 1, wherein a force generated by a linear tape motion urges the recording side of the magnetic tape against a first surface disposed in the work area so as to maintain a beam focus of the non-recording side of the tape with respect to the beam pattern.

61. (New) The method according to claim 1, wherein the optical beam pattern has a width that is substantially identical to a width of the magnetic tape.

62. (New) The method according to claim 3, wherein the servo marks that are located on the different servo tracks are marked simultaneously.

REMARKS

This Amendment is being provided in response to the outstanding office action for this case dated June 29, 2000. In this response, Applicants have canceled claims 2, 5, 6, 9, and 11, amended claims 1, 3, 4, 7-10, and 15, and drafted new claims 58-62 in order to more particularly point out and distinctly claim that which Applicants deem to be the invention. The newly added claims and the modifications to the claims provided herein are supported by the originally filed specification.

The rejection of claims 1-24 under 35 U.S.C. §103(a) as being unpatentable over Ford et al. (U.S. Patent No. 4,816,939) in view of Bettini et al. (U.S. Patent No. 3,768,752) is hereby traversed and reconsideration thereof is respectfully requested in view of the remarks set forth below.

Independent claim 1, as amended herein, is directed to a method for producing on a magnetic tape that includes a magnetic recording side and a non-recording side opposite the recording side, servo tracks that can be optically detected independently from one another. The method includes passing at least a portion of the magnetic tape through a

work area, providing a beam pattern of a plurality of intensity-modulatable optical beams, directing the beam pattern on the non-recording side of the magnetic tape, and marking on the non-recording side of the portion of the magnetic tape, as the tape passes through the work area, the plurality of optically detectable servo tracks. Claims 3, 4, 7, 8, 10, 12-24 and 58-62 depend from claim 1.

Ford ('939) discloses magnetic recording media adapted to provide continuous servo information using a light-transmissive optical grating in combination with a continuous magnetic layer, without reduction in the area of the magnetic coating being available for magnetic recording due to the presence of the optical grating. Ford's technique requires that both the magnetic recording media and the substrate are light-transmissive at least for selected wavelengths, which is not readily attainable in magnetic recording applications. Ford suggests that the optical grating technique could be applied to floppy disks, rigid disks as well as tapes.

The technique proposed by Ford relies on an optical interference pattern (Moiré pattern) produced when two gratings that have a different grating period or are oriented at an angle relative to one another, are superimposed. Optical interference effects are cooperative effects produced by the superposition of optical wave fronts that originate from a plurality of spatial features of the grating, i.e., a plurality of grating grooves (see Figs. 7-9 of Ford). In other words, Ford's servo system does not detect individual marks, such as the individual lenticules 14a located on the media 12, but rather the sinusoidal intensity pattern 120 produced by the interaction between the optical grating 14 and the reference grating 114. The peak (120b)-to-valley (120a) ratio depends on the total number of interacting grating periods of gratings 14, 114. For this reason, Ford's optical grating extends over an area at least substantially coextensive with the magnetic recording area of the media. (col. 3, lines 36-38).

In other words, Ford does not employ servo tracks that are optically detected independently from each other, as recited in claim 1 of this application. Moreover, Ford does not disclose, teach or suggest a method for producing such optically detectable servo tracks by providing a beam pattern of a plurality of intensity-modulatable optical beams, directing the beam pattern on the non-recording side of the magnetic tape, and marking

on the non-recording side of the portion of the magnetic tape, as the tape passes through the work area, the plurality of optically detectable servo tracks. Yet, this is the subject matter of amended claim 1.

Bettini et al. ('752) discloses a tape feeding mechanism and marking on an unwound tape. However, Bettini fails to disclose, teach or suggest a method of producing with optical beams optically detectable servo marks on a magnetic tape. In particular, Bettini fails to bridge the gap between Applicants' claimed subject matter and the Ford reference discussed *supra*.

Accordingly, Applicants respectfully request that the rejection of claim 1 be withdrawn. Claims 3, 4, 7, 8, 10, 12-24 and 58-62, which all depend from claim 1, should be patentable for the same reason that claim 1 is patentable.

In addition, Applicants wish to point out that their successful implementation of optical servo marks arranged on servo tracks on the non-recording side of the magnetic tape is the result of lengthy experimentation which made it possible to produce servo tracks on the tape with reproducible lateral alignment relative to the tape edges and a reproducible width and depth. It would require undue experimentation to develop a method for forming an optical servo pattern based on Ford's disclosure. Moreover, unlike Ford's servo system, Applicants' method is not restricted to transparent media and transparent magnetic coatings and can operate with conventional magnetic tapes. Accordingly, Applicants submit that optically marking of a plurality of servo marks located on different tracks of a magnetic tape is neither taught nor suggested by Ford and Bettini, either alone or in combination, or by the other references of record.

Based on the above Amendment and Remarks, Applicants respectfully request that the Examiner reconsider and withdraw all outstanding rejections and objections. Favorable consideration and allowance are earnestly solicited. Should there be any questions after reviewing this paper, the Examiner is invited to contact the undersigned at 617-832-1000 (direct dial: 617-832-1753).

Respectfully submitted,
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